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| 10/511,761 | 10/19/2004 | Robert Parker | 259601US0PCT | 6720 |
| 22850 | 7590 | 07/29/2008 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | | BALASUBRAMANIAN, VENKATARAMAN |
| ART UNIT | | PAPER NUMBER | | |
| | | 1624 | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|-----------------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/511,761 | PARKER ET AL. | |
| | Examiner | Art Unit | |
| | /Venkataraman Balasubramanian/ | 1624 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 23 April 2008.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Applicants' response, which included amendment to claims 5, 6, 10 and addition of new claims 17-20, filed on 4/23/2008, are made of record. Claims 1-20 are now pending. In view of applicants' response, the 112 second paragraph rejections made in the previous office action have been obviated. However, the following rejections made in the previous office action are maintained.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compound of formula I wherein Y is phenyl and X is phenyl with COOH groups using copper compound, does not reasonably provide enablement for compound of formula I wherein the X and Y are various groups with various substituents using any metal compound as embraced in claim 1. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The following apply:

In evaluating the enablement question, following factors are considered. Note *In re Wands*, 8 USPQ2d 1400 and *Ex parte Forman*, 230 USPQ 546. The factors include:
1) The nature of the invention, 2) the state of the prior art, 3) the predictability or lack thereof in the art, 4) the amount of direction or guidance present, 5) the presence or

absence of working examples, 6) the breadth of the claims, and 7) the quantity of experimentation needed.

1. The nature of the invention and the state of the prior art:

The invention is drawn to a process of making compound of formula I by reacting compound of formula Ia with compound of formula Ib in presence of metal compound under microwave energy. The X and Y variables and organic radical and metal compound used include any metal compound for both of which there is no enabling disclosure in the specification. As recited X and Y can be any radical with reactive substituents. Specification is not adequately enabled as to how to make compounds of formula (I) wherein the said X and Y are any organic radical. See claim 5 for several choices. In addition, the specification is not adequately enabled for any metal compound.

2. The predictability or lack thereof in the art:

Hence the process as applied to the above-mentioned compounds claimed by the applicant is not an art-recognized process and hence there should be adequate enabling disclosure in the specification with working example(s).

3. The amount of direction or guidance present:

Examples illustrated in the experimental section or written description offer no guidance or teachings as to how perform the process of making compound of Formula I wherein X is phenyl, Y is phenyl.

5. The presence or absence of working examples:

Although examples in the specification show the process, they are limited to X is phenyl, Y is phenyl with copper compound. There are no representative examples showing the viability of the process for X and Y are any radical with various substituents and metal compound embraced in the instant claims.

6. The breadth of the claims:

Specification has no support, as noted above, for all compounds generically embraced in the claim language would lead to desired compound of formula I with said process and there is also no valid chemical reasoning for one trained in the art to expect that one can arrive at a compound wherein X and Y any radical with any substituents .

7. The quantity of experimentation needed:

The quantity of experimentation needed would be an undue burden on skilled art in the chemical art since there is inadequate guidance given to the skilled artisan for the many reasons stated above. Even with the undue burden of experimentation, there is no guarantee that one would get the product of desired structure, namely compound of formula I embraced in the instant claims.

Thus, factors such as “sufficient working examples”, the “level of skill in the art and predictability, etc. have been demonstrated to be sufficiently lacking in the case for the instant claims.

This rejection is same as made in the previous office action but now includes newly added claims 17-20. Applicants’ traversal is not persuasive. Contrary to applicants’ urging, the scope of Wang et al., does not include instant scope. The teaching of Wang is mainly limited simple compounds with no reactive groups as

embraced in the instant claims. Specification has not exemplified representative examples showing the viability of the reaction in presence such diverse functional groups embraced in the instant claims. As noted before, prior art does not suggest or teach such a coupling reaction with various diverse functional groups. Hence, the process is not art recognized with such functional groups. It is applicants' burden to show representative examples for the viability of the process with all these functional groups.

Contrary to applicants' urging the specification has examples to show the viability of the said process with above functional groups, there are no representative examples in the specification. Page 11 and 12 show examples with halobenzoic acid but these are really complex functional groups embraced in the rejected claims. In addition, all prior art cited and those in the IDS do not lend support to the viability of the process with above said vast variable groups.

Hence, this rejection is proper and is maintained.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 7, 8 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Erdelyi al., J. Org. Chem., 66, 4165-4169, 2001.

Erdelyi et al., copper and palladium catalyzed cross coupling of alkynes under microwave irradiation, which includes instant process and compounds. See entire document.

This rejection is same as made in the previous office action except that claim 6 is excluded from this rejection. Applicants' traversal is not persuasive. Applicants have argued that the product formed by the process of Erdelyi et al., is different from the instant product. This is incorrect. Instant Y permits any organic group including those taught in Erdelyi et al.

Again contrary to applicants' urging, the halo groups taught by Erdelyi et al., include bromo and chloro. See Table 1.

Hence, this rejection is proper and is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 and 6-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erdelyi et al., J. Org. Chem., 66, 4165-4169, 2001 in view of Wang et al., J. Chem. Research (S), 536-537, 2000.

Erdelyi et al., copper and palladium catalyzed cross coupling of alkynes under microwave irradiation, which includes instant process and compounds. See entire document.

Erdelyi et al., differs in not teaching use of alkali carbonates and use of alkyl halides for the coupling process.

Wang et al., copper catalyzed cross coupling of alkynes under microwave irradiation, which includes instant process and compounds. See entire document. Wang et al., also teaches use of alkyl halide and alkali carbonates.

Thus, one having ordinary skill in the art at the time of the invention was made would have been motivated to employ the process taught by Erdelyi and Wang to the analogous starting materials and reactants of the instant invention along with suitable

base and expect to obtain the desired product because he would have expected the analogous starting materials and reactants react similarly in view of the combine teaching of the prior art. It has been held that application of an old process to an analogous material to obtain a result consistent with the teachings of the art would have been obvious to one having ordinary skill. Note *In re Kerkhoven* 205 USPQ 1069. See *In re KSR International vs. Teleflex Inc.*, 82 USPQ2d 13-85, 1397 (2007).

See also MPEP 2144.05, which says, under Optimization Within Prior Art Conditions or Through Routine Experimentation:

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%). See also *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.). For more recent cases applying this principle, see *Merck & Co. Inc.*

v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997).

This rejection is same as made in the previous office action but now includes newly added claims 17-20. Applicants' traversal to overcome this rejection is not persuasive.

As discussed in the above 102 rejection, Instant Y permits any organic group including those taught in Erdelyi et al.

Again contrary to applicants' urging, the halo groups taught by Erdelyi et al., include bromo and chloro. See Table 1.

Applicants' argument, that Kabalka indicates chloro and bromo do not react under his conditions, is not persuasive. As noted above, Erdelyi clearly shows that both arylchloride and arybromide react under his conditions. Wang et al., is used to show that alkali carbonates can be used and that aryl iodo also would undergo coupling with arylacetylene. See Table 1.

Thus, one trained in the art would be motivated to combine these two references and expect the process would be viable for all starting materials.

Also see KSR International Co. v. Teleflex Inc., 127 S.Ct. 1727 (2007), wherein the court stated that

[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads

to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.

Such is the case with instant claims. Based on the combined teaching of the process taught in the applied prior art, which provide guidance to the process of making alkyne compounds with various the starting material along with the process conditions and variables, one trained in the art would be motivated to make alkyne compounds. Such compounds are within the skill set of one trained in the art.

Hence, this rejection is proper and is maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication from the examiner should be addressed to Venkataraman Balasubramanian (Bala) whose telephone number is (571) 272-0662. The examiner can normally be reached on Monday through Thursday from

8.00 AM to 6.00 PM. The Supervisory Patent Examiner (SPE) of the art unit 1624 is James O. Wilson, whose telephone number is 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAG. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-2 17-9197 (toll-free).

/Venkataraman Balasubramanian/

Primary Examiner, Art Unit 1624